



VEGETATION MANAGEMENT GUIDELINE

Cut-leaved teasel (*Dipsacus laciniatus* L.)
Common teasel (*Dipsacus sylvestris* Huds.)

SPECIES CHARACTER

DESCRIPTION

Although usually described as a biennial, teasel is perhaps more appropriately described as a monocarpic (plant that bears fruit once and dies) perennial. The plant grows as a basal rosette for a minimum of one year (this rosette period frequently is longer) then sends up a tall flowering stalk and dies after flowering and seed production. The period of time in the rosette stage apparently varies depending on the amount of time needed to acquire enough resources for flowering to occur.

During the rosette stage, leaves vary from somewhat ovoid in young plants to large and oblong leaves that are quite hairy in older rosettes. During the rosette phase teasel develops a large tap root. The tap root may be more than 2 feet (0.6 m) in length and 1 inch (2.5 cm) in diameter at the crown.

Cut-leaved teasel blooms from July through September. Common teasel blooms from June through October. Flowering plants have large, oblong, opposite, sessile leaves that form cups (the cups may hold water) and are prickly, especially on the lower midrib. Stems also are prickly. Teasel's unique inflorescence makes the plant readily identifiable when blooming. Flowers are small and packed into dense oval heads. The heads (inflorescences) are subtended by upcurved bracts and are located terminally on the flowering stems. Cut-leaved teasel usually has white flowers, while common teasel usually has purple flowers.

Flowering stems are hollow, have spines on the ridges along the entire length of the stems, and may reach 6-7 feet (1.8-2.1 meters) in height. The stems turn brown after seed production and may remain standing throughout the winter.

SIMILAR SPECIES

Prior to flowering, teasel can be confused with compass plant (*Silphium laciniatum*) or cup plant (*Silphium perfoliatum*). Compass plant and cup plant are native, perennial prairie plants that can grow to more than six feet tall. Teasel and compass plant have dissected leaves; however, compass plant has alternate leaves that are rough, but not prickly. Teasel and cup plant both have opposite, sessile leaves that form a cup, and can hold water, but cup plant leaves lack prickles. Teasel should be accurately identified before attempting any control measures. If identification of the species is in doubt, the plant's identity should be confirmed by a knowledgeable individual and/or by consulting appropriate manuals or keys.



DISTRIBUTION

Teasel is endemic to Europe. It was introduced to North America possibly as early as the 1700's. Another species, *Dipsacus fullonum*, was introduced for use in raising the nap of cloth. Possibly, cut-leaved and common teasel were introduced with *D. fullonum* or introduced accidentally with other plant material from Europe. Teasel has spread rapidly in the last 30-40 years. This rapid range expansion probably was aided by construction of the interstate highway system. Teasel has colonized many areas along interstates. Common teasel sometimes is used as a horticultural plant, which has aided in expansion of its North American range. In particular, the use of teasel in flower arrangements has aided its dispersal, especially to cemeteries. Teasels occur in 43 of 48 contiguous United States. Teasel is listed as a noxious weed in Colorado, Iowa, Missouri and Oregon. Teasel occurs throughout Illinois.

HABITAT

Teasel grows in open sunny habitats, ranging from wet to dry conditions. Optimal conditions seem to be mesic habitats. Teasel sometimes occurs in high quality prairies, savannas, seeps, and sedge meadows, though roadsides, dumps, and heavily disturbed areas are the most common habitats of teasel.

LIFE HISTORY

Teasel requires open areas at ground level for germination. After the teasel seedlings become established, they may remain in the rosette stage for several years. Teasel rosettes usually do not produce a flowering stem until the rosette is at least 12 inches (30 cm) in diameter. Size of the rosette rather than its age appears to determine when the plant will bolt.

Teasel begins flowering in the middle of the inflorescence and progresses to the top and bottom of the inflorescence simultaneously. Flowers are pollinated by honeybees and bumblebees. A single teasel plant can produce more than 2,000 seeds. Depending on conditions, up to 30-80% of the seeds will germinate, so each plant can produce many offspring. Seeds also can remain viable for at least two years. In areas away from traffic, seeds typically do not disperse far from the parent plant with more than 98% of seeds occurring within 14.5 feet (4.5 m) of the parent plant. In high traffic areas, such as along interstate highways, 3 percent of seeds dispersed 19-48 feet (6-15 m). Seeds may also be dispersed by water as they can also float for more than two weeks.

Parent plants often provide an optimal nursery site for new teasel plants after the adult dies. Dead adult plants leave a relatively large area of bare ground, formerly occupied by their own basal leaves that new plants readily occupy. Seeds may have the capacity to be water-dispersed, which may allow seeds to be dispersed over longer distances. Immature seed heads of cut-leaved teasel are capable of producing viable seed.

EFFECTS UPON NATURAL AREAS

Teasel is an aggressive exotic species that has the capacity to take over prairies and savannas if it is allowed to become established. Lack of natural enemies allows teasel to proliferate. If left unchecked, teasel quickly can form large monocultures excluding all native vegetation. Cut-leaved teasel is more aggressive than common teasel and has severely threatened

several northern and central Illinois natural areas.

CONTROL RECOMMENDATIONS

RECOMMENDED PRACTICES IN HIGH-QUALITY NATURAL AREAS

Cutting, removal, burning and herbicides offer the best solutions for control. Research is ongoing into these control methods.

Initial effort in areas of heavy infestation

In small infestations, rosettes can be dug up using a dandelion digger. As much of the root as possible must be removed to prevent resprouting, just as with dandelions. As an alternative, the tap root well below the root crown after the plants have bolted is an effective control method that usually does not produce sprouts. Grinding a notch in the cutting edge of a shovel or spade helps prevent the tool from slipping off the side of the root. The severed stalk should be pulled to ensure complete separation of the stem from the root. This method is fast, efficient, and results in little damage to non-target species.

The inflorescence(s) of flowering plants can be cut after flowering has initiated. The plant should not resume flowering and should die at the end of the growing season. However, plants should be monitored periodically for the remainder of the growing season to ensure new inflorescences do not develop. Cut inflorescences should be removed from the natural area, because seeds still can mature on the stem even after cutting. Cutting the flowering stalk before flowering should be avoided because the plant will usually send up a new flowering stalk(s). Cutting inflorescences may need to be repeated for several years to control teasel. Teasel in nearby areas should also be eliminated to prevent introduction of new seed.

Foliar application of 2,4-D amine, triclopyr, and clopyralid herbicides are recommended where cutting (and removal) or digging-up is not feasible. Application of herbicides should be made on a spray-to-wet basis. Spray coverage should be uniform and complete. **Do not spray so heavily that herbicide drips off the target species.** When using a hand-held or backpack sprayer, herbicides should be applied while backing away from the treated area to avoid walking through the wet herbicide. By law, herbicides may only be applied as per label directions and by licensed herbicide applicators or operators when working on public properties.

The herbicide 2,4-D amine is selective to broadleaf plants; it will not harm most grasses. 2,4-D amine is available under a number of trade names. It should be applied according to label directions in early spring when the rosettes are young.

Triclopyr is a broadleaf herbicide that should not harm monocot species and is available under the trade names (Garlon 3A and Tahoe 3A). A 2% solution has proven successful. Triclopyr needs the addition of 0.5% non-ionic surfactant. Garlon 3A is rainfast in three hours.

Clopyralid, available under the trade name Transline or Stinger, is a broadleaf specific herbicide that will not harm grasses. It is particularly effective against members of the nightshade (Solanaceae), smartweed (Polygonaceae), pea (Fabaceae) and aster family (Asteraceae), so it may not be the best option for communities dominated by any of those species. For teasel control, a 0.75% solution (1 ounce of Transline) with a surfactant (0.64

ounces Cide kick) mixed with enough water to make a gallon is effective. Transline is rainfast in two hours; Stinger in six hours. Although most effective when applied to rosettes, Transline can also kill bolting plants. This trait allows for treatment in mid summer when most other herbicides are less effective. In a comparative study at the Lake County Forest Preserve District, a 0.75% solution of Transline performed slightly better than a 2% solution of Garlon 3A and considerably better than a 2% solution of Roundup. Transline treated plots had 100% kill with few teasel seedlings and greater recruitment of native species. Garlon 3A was less effective on larger rosettes and more seedlings were present. Roundup created bare areas and had the greatest recruitment of teasel seedlings.

For small infestations, a 25% solution of glyphosate (tradename Roundup) can be applied to foliage and stems using a wick or wet sponge applicator. Great care should be taken to ensure the herbicide is not spilled or dripped onto non target species.

None of the aforementioned herbicides, particularly Transline, should be sprayed over or near standing water. For those circumstances, use of Rodeo is more appropriate. Refer to the section on Buffer and Disturbed Sites for mixing and application rate.

Initial effort in areas of light infestation

Late spring burns may be useful for controlling teasel before it becomes dense. Once an area is densely covered with teasel rosettes, fire does not carry well through the teasel-infested area. Prescribed burns probably work best in conjunction with other methods indicated above. In addition, teasel plants can be dug up or flowering stems can be cut and removed as described above.

Maintenance control

The area should be monitored periodically for teasel invasion. New plants should either be dug up or flowering stems should be cut and removed as described above. Periodic fall or late spring prescribed burns should help control teasel.

RECOMMENDED PRACTICES IN BUFFER AND SEVERELY DISTURBED SITES

Same as for high quality areas plus foliar applications of glyphosate. Glyphosate is available under the trade name Roundup, Rodeo, Touchdown and Accord. Glyphosate is non-selective, so care should be taken not to let it come in contact with nontarget species. Although glyphosate is most effective during the summer when the plant is actively growing, it is also effective in late fall or early spring. Teasel rosettes remain green and active after most prairie plants have died back in the fall, and green up and start growing in the spring before many prairie plants do. Application at these times will result in less potential harm to non-target species. For best results, use a 1.5-2% solution of glyphosate (2-2.5 ounces of glyphosate/gallon of clean water). Glyphosate products should not be used to control teasel in natural areas when prairie plants are actively growing. This will result in unnecessary injury to native species. Glyphosate should be applied carefully by hand sprayer to individual teasel rosettes during late fall or early spring.

FAILED OR INEFFECTIVE PRACTICES

No biological controls are known that are feasible in natural areas. Teasel is susceptible to some diseases, such as white mold or *Sclerotinia* disease caused by the fungus *Sclerotinia sclerotiorum* that causes wilt, rot and blight in infected plants. However, *Sclerotinia* diseases also affect a vast array of ornamentals, field crops, and vegetables. Other agents that may hold promise are a flea beetle (*Longitarsus strigicollis*), a leaf beetle (*Galerucea pomonae*), leaf rolling moths (*Cochylis roseanna* and *Endothenia gentianaeanana*), and a nymphalid moth (*Euphydryas aurenia*).

Cutting flowering stems without removing the cut flower heads from the area leaves viable seed on the site. Cut flower heads can contain viable seed and the seeds must be removed from the site.

Treating the rosette with herbicide during the dormant season is not effective. A single control effort is not effective.

Mowing teasel short several times per year may prevent flowering, but will not kill the plant or prevent it from flowering after mowing is stopped. Mowing can also aid in seed dispersal, particularly if mowed after seeds mature. Close mowing that scalps the sod can create an ideal seedbed for teasel.

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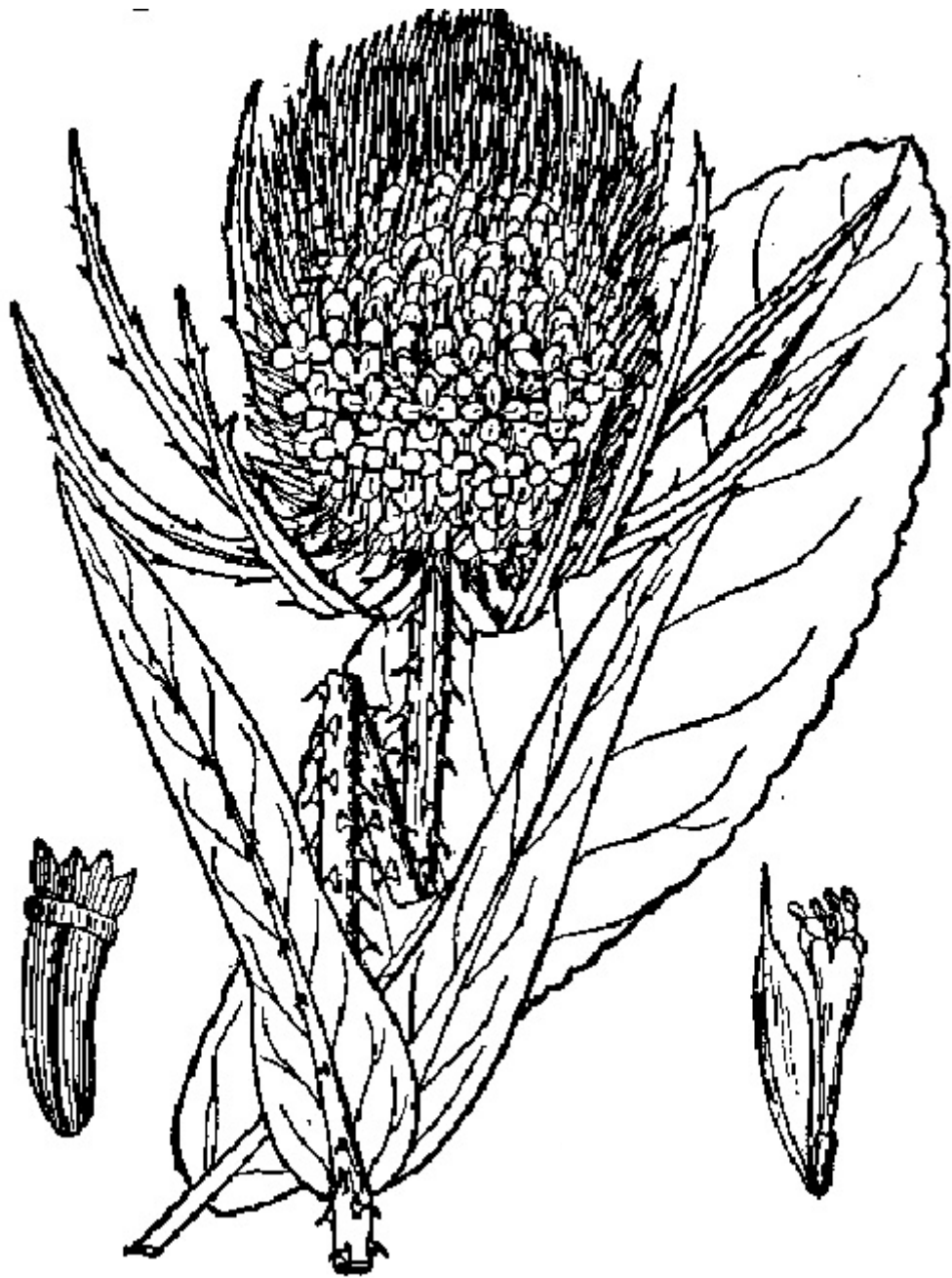
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Dipsacus sylvestris